DOCUMENT RESUME

ED 269 671 CG 019 056

AUTHOR Jamieson, David W.; And Others
TITLE Pygmalion Revisited: New Evidence for Student Expectancy Effects in the Classroom.
PUB DATE 21 May 86
NOTE 27p.; Paper presented at the Annual Convention of the American Psychological Association (92nd, Toronto, Ontario, Canada, August 24-28, 1984).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; *Competence; *Expectation; Foreign Countries; Grade 11; High Schools; *High School Students; Student Attitudes; Student Behavior; *Student Evaluation of Teacher Performance; *Teacher Evaluation; Teacher Motivation
IDENTIFIERS Canada

ABSTRACT

Many researchers have demonstrated that student expectations of teacher competence can affect student performance outcomes. The artificiality of laboratory paradigms used in past research, however, may severely limit the generalizability of findings. A field study was conducted to test the idea that students' expectations regarding their teacher's competence would influence their perceptions of teacher's performance, their classroom behavior, and their academic achievement. Subjects were four classes of grade 11 students (N=64). On the first day of a 3-week teaching unit being taught by a teacher new to the school, all subjects completed a questionnaire assessing their perceptions of the teacher's ability and motivation. Two classes were then assigned to a positive expectancy condition while the remaining two classes served as no-expectation controls. Following the unit, the questionnaire was again administered to all subjects. The results indicated that, at the end of the unit, students in the two positive expectancy classes changed their perceptions of some aspects of the teacher's competence more, engaged in more appropriate and less inappropriate non-verbal behavior, and received significantly higher final grades on the unit than did their peers in the two no-expectation control classes. These findings support the view that students can have an important influence on the teaching process and on their own academic attainment. Four pages of references are included. (NB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED269671

Pygmalion revisited: New evidence for student expectancy effects in the classroom

David W. Jamieson

John E. Lydon

Glenn Stewart

Mark P. Zanna

University of Waterloo

Date Submitted: May 21, 1986

Running Head: PYGMALION REVISITED

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

David Jamieson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CG 019056

Author Notes

This article is based largely on thesis research conducted by the third author (Stewart, 1975). A shorter version of this paper was presented at the Annual Meeting of the American Psychological Association, Toronto, 1984.

We wish to thank John Holmes, Shelley Hymel and Elise Ditner for their comments on earlier aspects of the research and on previous versions of this manuscript.

Correspondence concerning this article should be addressed to Mark P. Zanna, Department of Psychology, University of Waterloo, Waterloo, Ontario N2L 3G1, Canada.

Pygmalion revisited: New evidence for
student expectancy effects in the classroom

Abstract

A field experiment was conducted to test the idea that students' expectations regarding their teacher's competence would influence their perceptions of the teacher's performance, their classroom behavior and, ultimately, their academic achievement. At the end of a three-week teaching unit, students in two classes who had been given an initial positive expectancy about their teacher's ability and motivation changed their perceptions of some aspects of the teacher's competence more, engaged in more appropriate and less inappropriate non-verbal behavior, and received significantly higher final grades on the unit than did their peers in two no expectation control classes. Speculations were offered about both the indirect (teacher-mediated) and direct (student-mediated) processes by which students' expectations may have come to affect their academic outcomes. The importance of group-level expectancies and some ethical issues in student expectancy research were also discussed.

Pygmalion revisited: New evidence for student expectancy effects in the classroom (submitted May 21/86)

The expectation that a teacher has about a student's ability sometimes acts as a self-fulfilling prophecy, bringing about the very level of academic attainment for that student that was originally expected. Initial research on teacher-student interactions, which established the existence of this phenomenon in the classroom (Rosenthal & Jacobson, 1968), has been followed by theory and research articulating the process by which differential teacher expectancies for student achievement produce actual differences in student performance (Braun, 1976; Brophy & Good, 1974; Cooper, 1979; Cooper & Good, 1983). Partially as a result of such efforts, investigators have recently recognized the active role played by students in the teaching situation (Weinstein, 1983).

Student perceptions of teacher behavior mediate the relation between teacher expectations and student outcomes (Brattesani, Weinstein, & Marshall, 1984). Yet, in addition to their role as mediators of the teacher communication process, students are agents of influence in their own right, acting on the perceptions and expectations they hold about the learning experience. Thus, experimental studies of student expectations for their own achievement have amply demonstrated an impact of this belief upon subsequent academic attainment (Rappaport & Rappaport, 1975; Zanna, Sheras, Cooper, & Shaw, 1975). And other research exploring the effects of student expectations about teacher characteristics has shown that student expectancies about teacher variables such as

expressiveness (Ware & Williams, 1975) and the "warm/cold" dimension of personality (Kelley 1950; Manni, 1975) influence both student ratings of teacher ability and student achievement under certain circumstances.

Perhaps one of the most interesting and influential teacher variables that has been examined in this latter context is the student-perceived competence of the teacher. A perfect complement to the kind of expectancy first investigated in this research literature (that of teacher expectancies for student achievement), student expectancies for teacher competence are likely to influence student motivation and performance. It seems highly plausible that the belief that one is to be taught by a particularly skilled and intelligent teacher may enhance one's motivation and ultimately heighten one's academic outcomes. It also seems plausible that students form naturalistic expectations about their teachers' abilities in the first place: Just as individuals and classes develop academic and behavioral reputations that are communicated among teachers, teachers develop similar reputations that are communicated among students, both within and across grades (cf. Kulik, & Kulik, 1974).

In search of evidence for such student expectancy effects, Feldman and Prohaska (1979) created a laboratory interaction situation which cast college students in the roles of teacher and student for short, one-time dyadic teaching sessions. It was found that positive and negative expectations about their teacher's competence produced a

BEST COPY AVAILABLE

consequent difference in students' achievement on one of the two performance measures employed. A second experiment using a similar manipulation yielded a marginally significant effect on a multiple choice test (Feldman, Saletsky, Sullivan, & Theiss, 1983). Only one study conducted by these workers failed to find any support for the effects of this particular type of student expectancy on actual student performance (Feldman & Theiss, 1982).

Other investigators have explored student competency expectations through noninteractional studies in which college students are exposed to carefully crafted lecture materials. For example, Perry and his colleagues (Perry, Abrami, Leventhal, & Check, 1979; Perry, Niemi, & Jones, 1974) manipulated the teaching reputation of a college instructor who was then observed lecturing on videotape. In one of the two experiments in which achievement was assessed, a marginal main effect of expected teacher competence on student performance was observed. Thus, two independent laboratory paradigms have provided convergent, if somewhat weak, evidence regarding the causal importance of student expectations about teacher competence for students' own academic attainment.

It was very clear from each of these sets of experimental studies that manipulations of expected teacher competence reliably and powerfully affected students' perceptions of their instructors. That such effects were not as strongly evidenced on the measures of achievement employed may seem disappointing given the high degree of control normally afforded laboratory methods. However, in defence of these

ingenious experiments it must be noted that, in general, manipulated expectations are weaker than naturalistic ones in educational research (Braun, 1976), and that the causal connections between expectancies and one-time laboratory performances are likely to be weak and indirect. Given the pattern of results with regard to academic outcomes across studies, it seems safe to conclude that these experiments accomplished what they set out to do, namely, to demonstrate that student expectations of teacher competence <u>can</u> affect student performance outcomes.

Nevertheless, Feldman and his colleagues have themselves repeatedly signaled the need for more field work in this area, noting that the artificiality of laboratory paradigms may severely limit the generalizability of their findings: "Future research must examine the phenomenon of student expectation effects in more naturalistic and applied settings" (Feldman & Prohaska, 1979, p. 492). The purpose of the present study, therefore, was to address the ecological question of whether this phenomenon can, or typically does, occur <u>in real classrooms</u>. It was expected that in a real classroom, where teacher-student contacts may be characterized as ongoing, frequent, lengthy, nondyadic and of unequal status, students' expectancies about their instructor's competence might meaningfully influence their perceptions of the teacher, their classroom behavior, and, ultimately, their academic performance.

Method

Participants

Four classes of Grade 11 students from a local high school served as subjects in the study (total *N* = 64, 40 girls and 24 boys). A female teacher, who had recently been transferred to the school, taught these students a three-week unit on "Oral and Written English Skills" in the weeks immediately preceding their annual spring break.

Experimental Situation

The fortuitous transfer of a new teacher to the school provided optimal conditions for a test of expectancy effects at a time during the school year when, generalizing from the teacher expectancy literature, we otherwise might not have anticipated significant results. Because the students had no prior contacts with or expectations about the instructor, this experimental situation approximated the conditions that obtain at the beginning of a school year when the impact of (teacher) expectancies has been shown to be strongest (Cooper & Good, 1983; Raudenbush, 1984). In addition, the course content of English language instruction, perhaps owing to its more subjective nature, has been found in past research to be a subject matter particularly amenable to expectancy effects (Smith, 1980). Thus, various factors combined to provide a unique opportunity for conducting what we have termed an "experimental case study" involving a single teacher in interaction with students from four separate classes.

Procedure

Initial Expectations. On the first day of the unit all participants completed a questionnaire designed to assess their perceptions of the teacher's ability and motivation. Ratings of 15 teacher characteristics were made on 5-point scales labeled below average (1), average (2), above average (3), superior (4), and excellent (5). These were later summed into subscales representing four general dimensions of teacher behavior: ability to arouse student interest, ability to motivate intellectual activities, clarity of exposition and fair grading practices (cf. French-Lazovik, 1974). This instrument thus served as a measure of students' initial expectations regarding th ir new teacher's competence.

Manipulation of Expe tations. On the sixth teaching day of the unit,[1] two of the lasses were randomly assigned to a positive expectancy condit on while the remaining two classes served as a no expectation control.[2] The experimenter manipulated positive expect ncy by conducting individual interviews with each of the students from the two experimental classes who were in attendance that day. During the interviews, which were presented as a means for soliciting student feedback on general aspects of school courses, positive expectancy subjects were led to believe that their peers, the experimenter and the teacher herself all saw her as being highly capable and motivated to teach the English unit. This was done, primarily, by showing these students the (bogus) high mean ratings of the teacher made by their classmates. It was carefully explained to each person that

BEST COPY AVAILABLE

across the 15 categories of performance on which the teacher had been rated by the class, she had received a total of five excellent, eight superior and two above average ratings. It was emphasized that these were considered to be very high scores. In addition to communicating to students the enthusiasm of their peers, the interviewer also informed them that the experimental team rated the teacher and their class quite highly, and that the teacher had expressed excitement about the unit and her new students. At the end of the interview these individuals once again completed the teacher perception questionnaire as a check on the impact of the manipulation.

Owing to time limitations, students in the control classes could not be interviewed. As a result, no new expectations were imparted to them whatsoever on the sixth day of the unit and their perceptions of the teacher were not re-assessed at this time. An attempt to control the possible perception of preferential treatment between classes was made by having all four classes sign-up for the interviews, with the understanding that only a limited number of students would actually be called upon by the experimental team.

The teacher was kept blind to which classes had been manipulated by scheduling the interviews on a day she had planned to be, and was, absent from school. In addition, she was informed of neither the content of the manipulation nor the experimental hypotheses under investigation. In a later interview, the teacher admitted no awareness of the experimental inductions that were employed.

Dependent Measures

Student Perceptions of Teacher Competence. On the last day of the unit the questionnaire assessing student perceptions of the teacher was again administered to all four classes as a final measure of students' impressions of the teacher's competence.

Student Classroom Behavior. Six prime and two alternate target students from each class were randomly selected for systematic observation by two trained observers whose ratings were later averaged for analysis.[3] In the seven teaching days following the expectancy induction the prime students in each class, or their alternates in the event of absenteeism, were observed daily during the middle part of their English period for between 20 to 30 minutes (depending on the teaching curriculum and format for that day). Thirty-second recording intervals were used in which targets were observed for the first twenty seconds and behavioral codings were made in the remaining ten seconds.[4]

Student behaviors were coded into three mutually exclusive categories: appropriate non-verbal behavior, inappropriate non-verbal behavior and verbal behavior. Appropriate behaviors included paying attention during a lecture or exercise and reading and writing during reading and writing sessions. Inappropriate behaviors consisted of such things as inattention, gross motor responses and talking out of turn or when silence was required. The third major category recorded, verbal behavior, was annotated in three

subcategories: teacher-afforded response opportunities, teacher-afforded communications and student-initiated actions (cf. Brophy & Good, 1970). The quality of student responses and teacher feedback were also recorded in an attempt to gauge the extent to which student expectation differences might manifest themselves in differential teacher behavior.

Student Performance Measures. Students' academic performance was assessed in two ways. First, each student's final mark for the unit was noted. This final grade was an overall evaluation of student performance assigned by the teacher after consideration of each student's test performances, class contributions, effort, diligence in completing homework assignments, absenteeism and so forth. In addition, students' marks for all of the graded tests and assignments completed during the unit were recorded. Some of these grades were subjective assessments made by the teacher of students' oral and written work; others were objective measures of students' performances on tests of English proficiency.

Results

Results for each of the measures collected are summarized below. Data from the two experimental and two control classes have been combined within condition in this presentation.

Initial Expectations and Manipulation Check

The positive expectation students did not differ from the no expectation controls in terms of their initial pre-manipulation expectations regarding any of the four domains of teacher competence that were assessed (*t*s < 1 in all cases). Immediately following the expectancy manipulation, students in the positive expectation condition significantly changed their expectations about the teacher's competence relative to their initial baselines in each of the four competence domains (correlated *t*s > 3.46, *p*s < .01 in all cases). Thus, the manipulation successfully persuaded these experimental subjects to expect a teacher more competent than they had originally anticipated.

Dependent Measures

Student Perceptions of the Teacher. In general, both groups viewed the teacher more favorably by the end of the unit than they had at the beginning. An examination of change scores revealed, consistent with our hypothesis, that increments in perceived teacher competence were greater within the positive expectancy group than within the control group for three of the four categories assessed. However, only one of the competency categories showed a significant between-groups effect. Relative to their initial, pre-manipulation baselines, the positive expectancy students' ratings of the teacher's "clarity of exposition" changed more over the course of the unit than did their control counterparts' ratings, $t(52) = 2.23$, $p < .05$.

Student Classroom Behavior. In the seven days following the experimental induction, the positive expectancy students displayed significantly more appropriate non-verbal behavior ($t[27] = 2.68$, $p < .02$) and significantly less inappropriate non-verbal behavior ($t[27] = 2.10$, $p < .05$) than did the no expectancy control students. Whereas 75.9% of the experimental students' total classroom activity was categorized as appropriate non-verbal behavior, only 60.5% of the control students' behaviors were deemed to be appropriately non-verbal. At the same time, positive expectancy students were engaging in only 19.3% inappropriate non-verbal behavior as compared with 31.7% for the controls.

Unfortunately, none of the three types of verbal teacher-student interaction occurred with sufficient frequency to afford reliable inference about it in this study. The verbal interaction subcategories, when combined, accounted for less than 5% of the sampled behavior among students in the positive expectation condition, and only about 8% of students' behavior in the no expectancy control. As a result, no reliable information regarding the teacher's behavior or her use of praise and criticism was obtained using our behavioral time-sampling procedure.

Student Performance. An examination of the overall final grades for the students indicated that students in the experimental condition received significantly higher mean grades, 83.95%, than did the control students, 73.98% ($t[60] = 2.66$, $p < .01$). This difference in final grades seemed to be more attributable to significant differences between the two

groups in their performance on the unit's objective tests and assignments ($t[56] = 1.99$, $p < .06$) than to differences in their performance on the more subjective tests ($t < 1$).

Discussion

Unlike the mixed or weak results formerly obtained in laboratory simulations of the teacher-student interaction, this study produced data establishing that in a real classroom situation students' expectations can have a meaningful impact on their own perceptions, behavior and performance outcomes. Positive expectations regarding their teacher's competence caused changes in students' ongoing non-verbal behavior and performance, as well as more moderate effects on their long-term perception of the teacher's competence.

In speculating about the processes by which students' expectancies came to influence their outcomes in this study, the operation of a number of causal mechanisms seems likely. The first route by which students' competency beliefs may have affected achievement is an indirect one, through mediation by the teacher. The instructor in this study may have perceived the well-behaved positive expectancy classes more favorably than the control classes, perhaps attributing greater effort to them and forming higher expectations for their achievement. As a result, she may have shifted her energies away from strategies to maintain control towards efforts to maximize learning more quickly in these classes than in the no expectation groups (Cooper & Good, 1983). The end result may have been that she taught these students more material, or

taught it more effectively. Thus, differences in the teacher's instructional behavior, born of the communication of student expectancies, may account for the student performance differences evidenced here on both the objective and overall grades.

Unfortunately, insufficient observational data about the teacher's behavior were collected in this study to thoroughly address such speculations. While we know that the teacher showed little evidence of differential grading on the subjective tests, and while the results of rankings and scalar ratings made by the teacher at the end of the unit indicated that her conscious preferences for the various classes did not systematically relate to the conditions to which these classes were assigned, future research must nevertheless examine this issue using more objective measures of teacher behavior. It remains a plausible possibility that student expectancies caused the teacher to behave differently in the classes in ways about which she was not aware.

The second likely route of influence in the student expectancy-student achievement relation may have been the more direct causal effect of students' beliefs on their own motivation and behavior. As Cooper and Good (1983) have found, students' expectations for and perceptions of teacher variables are likely to relate more strongly to student outcomes than are actual teacher characteristics. Here, as a result of believing they were to be taught by a highly competent teacher, students may have perceived a greater potential for learning, set higher standards for their own

achievement, expected a stronger general contingency of outcomes with effort, or formed stronger self-efficacy expectations. While each of these variables should be explored in future research, all are capable of motivating students to behave more appropriately and to work harder. Thus, positive expectations of the teacher may have had relatively unmediated influences on students' effort and academic attainment in this experiment, in addition to the traditionally recognized route through differential teacher expectations and behavior. Of course, none of this is to say that these two processes are likely to operate exclusively or independently in general, and the very strength of the present findings is perhaps attributable to their joint or interactive effects.

Still another reason for the striking academic and behavioral differences obtained here may be that classroom teacher-student interactions are more frequent, long-lasting, involving and complex than are those simulated in the laboratory. Thus, while the behavioral expression of a student's expectancies might have been expected to be stronger in controlled laboratory settings--having less opportunity to be communicated to a real teacher due to the unequal status arrangement of the classroom situation (Feldman & Prohaska, 1979)--the cumulative effect of <u>many</u> student-teacher interactions may better allow expectations about teacher competence to manifest themselves in students' objective academic achievement in real-world environments. Future research is needed to further examine the impact of

quantitative interaction characteristics on the joint communication of expectancies between teachers and students.

To the extent that teacher behavior may have been the primary mediator of the expectancy-achievement relation here, the strength of our findings may also be attributable to the fact that the expectancies of entire classes were brought to bear on the teacher in this research. In general, student expectancy effects may prove to be much more impactful when a group of students holds a single shared expectancy regarding a teacher than when individual students hold differential expectancies. Teachers may more readily perceive and react to such group-level expectations, and, as Brophy (1983) has observed, "differential teacher treatment of intact groups and classes may be a much more widespread and powerful mediator of self-fulfilling prophecy effects on student achievement than differential teacher treatment of individual students within the same group or class" (p 643).

By the same token, to the extent that students' own perceptions and behavior may have more directly influenced their performance, our manipulation of a group-level expectancy for teacher competence may have had its strong effect owing to the expectancies of many students acting on each other. Knowledge of their peers' competency expectations as well as perceptions of the class's cooperative behavior were probably powerful forms of social influence on the subjects in our positive expectancy condition, especially since these perceptions and expectations were held and acted upon by almost all the students in those classes. While it

may be argued that the possibility of group polarization effects limits the generality of the present study, the manipulation of a univalent, shared expectancy about a teacher is conceptually representative of at least some classrooms where teachers have developed reputations that precede them. The influence of many students whose beliefs are mutually communicated and conjointly brought to bear on both the teacher and each other in such classrooms may result in powerful group-fulfilling or group-sustaining effects (cf. Cooper & Tom, 1984). Clearly, future research is needed to enumerate and explore the social moderators of self-fulfilling prophecy effects.

Finally, a cautionary note is in order with regard to our experimental case study approach. Although it was well-suited to the exigencies of the research opportunity afforded us, this method may have had some unintended effects. We found that students' end-of-unit grades differed significantly not only between groups, but also relative to their pre-experimental performances as well. When compared with their English grade point averages achieved on the units completed prior to the experimental teaching unit, positive expectation subjects' marks improved significantly. While this corroborated our experimental hypothesis, we also found, unexpectedly, that the control students' marks were significantly lower than their pre-unit averages. (The initial grade point averages of the two groups did not differ significantly from one another).

Some debate may be joined about whether such grade point averages are an appropriate baseline for this comparison. They were, after all, assigned by another teacher whose performance criteria and grading practices may have differed substantially from those employed by our instructor. Nevertheless, if one assumes that these baseline grades are relevant, at least two possible explanations (besides chance) exist for the finding of a decline in our control condition.

First, the decline may represent a phenomenon in its own right which would have appeared independently of our intervention, and for which we had no appropriate control. For example, because the unit was shortened to accommodate spring break, student motivation may have been undercut by the prospect of the impending school recess. Studies of performance changes immediately preceding school holidays will be needed to explore this hypothesis. Alternately, the importation of a new teacher to the classrooms may have caused generally lowered motivation and performance in these students (Cooper & Good, 1983). Faced with a loss of recognition for their past efforts and the prospect of discerning a new teacher's classroom reward structure, students may have temporarily lost their intrinsic motivation and goal orientation. If true, studies of new, substitute and short-term replacement teachers might evidence similar student achievement deficits. Whatever its cause, to the extent that a declining academic baseline may have been a real phenomenon in this study, the factors that would have produced it were common to both the experimental and control groups. This

would imply that our expectancy manipulation may have successfully inoculated students against the performance drops they would have otherwise experienced in the absence of our intervention.

A second possible reason for the declining control baseline is the prospect that, despite our efforts to conduct a conservative test of the hypothesis, the single-teacher experimental intervention may have itself caused a decrement. Although there is little evidence that the teacher viewed her classes differently, she may have nonetheless treated them differently in terms of both her teaching behavior and in her assignment of final marks. The mere possibility of a perceptual or behavioral contrast effect between experimental groups, whether its roots resided in a "Pygmalion-prone" teacher (Babad, Inbar, & Rosenthal, 1982) or in a compelling expectancy manipulation, raises obvious concerns about the ethics of conducting research using the "experimental case study" approach. Future field investigators of student expectancy effects may be better advised to employ multiple teacher paradigms. Better still, they may rely more heavily on correlational methods which capitalize on naturally occurring student expectations.

In sum, this experiment once again demonstrated the important influence that students have on the teaching process and on their own academic attainment. Subsequent studies of student expectancy effects need to more clearly assess in parallel fashion, the perceptions, expectations, attitudes, behaviors, and performances of both students and teachers with

respect to both each other and themselves. Only then will we better understand how expectancies are formed and communicated by students, and how they are perceived and acted upon by teachers. Only then will we further articulate the general theoretical model of student-teacher interaction that underlies the translation of student expectancy to student fact.

References

Babad, E. Y., Inbar, J., & Rosenthal, R. (1982). Pygmalion, Galatea and the Golem: Investigations of biased and unbiased teachers. Journal of Educational Psychology, 74, 459-474.

Brattesani, K. A., Weinstein, R. S., & Marshall, H. H. (1984). Student perceptions of differential teacher treatment as moderators of teacher expectation effects. Journal of Educational Psychology, 76, 236-247.

Braun, C. (1976). Teacher expectation: Sociopsychological dynamics. Review of Educational Research, 46, 185-213.

Brophy, J. E. (1983). Research on the self-fulfilling prophecy and teacher expectations. Journal of Educational Psychology, 75, 631-661.

Brophy, J. E., & Good, T. L. (1970). Teacher's communication of differential expectations for children's classroom performance: Some behavioral data. Journal of Educational Psychology, 61, 365-374.

Brophy, J. E., & Good, T. L. (1974). Teacher-student relationships. New York: Holt, Rinehart & Winston.

Cooper, H. M. (1979). Pygmalion grows up: A model for teacher expectation communication and performance influence. Review of Educational Research, 49, 389-410.

Cooper, H. M., & Good, T. L. (1983). Pygmalion grows up: Studies in the expectation communication process. New York: Longman.

Cooper, H. M., & Tom, D. Y. H. (1984). Teacher expectation research: A review with implications for classroom instruction. Elementary School Journal, 85, 77-89.

Feldman, R. S., & Prohaska, T. (1979). The student as Pygmalion: Effect of student expectation on the teacher. Journal of Educational Psychology, 71, 485-493.

Feldman, R. S., Saletsky, R. D., Sullivan, J., & Theiss, A. J. (1983). Student locus of control and response to expectations about self and teacher. Journal of Educational Psychology, 75, 27-32.

Feldman, R. S., & Theiss, A. J. (1982). The teacher and student as Pygmalions: Joint effect of teacher and student expectations. Journal of Educational Psychology, 74, 217-223.

French-Lazovik, G. (1974). Predictability of students' evaluations of college teachers from component ratings. Journal of Educational Psychology, 66, 373-385.

Kelley, H. (1950). The warm-cold variable in first impressions of people. Journal of Personality, 18, 431-439.

Kulik, J., & Kulik, C. (1974). Student ratings of instruction. Teaching of Psychology, 1, 51-57.

Manni, J. L. (1975). The effect of the warm-cold variable on students' expectations for teacher performance and students' learning. Dissertation Abstracts International, 36, 3518A-3519A.

Perry, R. P, Abrami, P. C., Leventhal, L., & Check, J. (1979). Instructor reputation: An expectancy relationship involving student ratings and achievement. Journal of Educational Psychology, 71, 776-787.

Perry, R. P., Niemi, R. R., & Jones, K. (1974). Effect of prior teaching evaluations and lecture presentation on ratings of teacher performance. Journal of Educational Psychology, 66, 851-856.

Rappaport, M. M., & Rappaport, H. (1975). The other half of the expectancy equation: Pygmalion. Journal of Educational Psychology, 67, 531-536.

Raudenbush, S. (1984). Magnitude of teacher expectancy effects on pupil IQ as function of the credibility of expectancy induction: A synthesis of findings from 18 experiments. Journal of Educational Psychology, 76, 85-97.

Rosenthal, R., & Jacobson, L. (1968). Pygmalion in the classroom: Teacher expectation and pupils' intellectual development. New York: Holt, Rinehart & Winston.

Smith, M. (1980). Meta-analysis of research on teacher expectations. Evaluations in Education, 4, 53-55.

Stewart, G. (1975). Analysis of the student expectancy effect in teacher-pupil interactions. Unpublished Bachelor's thesis, Princeton University, NJ.

Ware, J. E., & Williams, R. G. (1975). The Dr. Fox effect: A study of lecture effectiveness and ratings of instruction. Journal of Medical Education, 50, 149-156.

Weinstein, R. S. (1983). Student perceptions of schooling. Elementary School Journal, 83, 151-188.

Zanna, M. P., Sheras, P. L., Cooper, J., & Shaw, C. (1975). Pygmalion and Galatea: The interactive effects of teacher and student expectancies. Journal of Experimental Social Psychology, 11, 279-287.

Footnotes

1. In reviewing experimental studies of the teacher expectancy effect, Raudenbush (1984) has argued that more than two weeks of teacher-student contacts prior to an induction of expectations is sufficient to render expectancy effect sizes nonsignificant. Assuming that a similar pre-manipulation time frame might also apply to student expectancies, we ensured that our induction of positive expectations occurred well within this limit.

2. Note that by contrasting a positive with a neutral expectancy condition we conducted a more conservative test of the hypothesis than would have been possible if positive and negative expectancies had been imparted.

3. Because one observer, the third author, was not blind to the experimental conditions, twelve separate reliability checks were made to examine the possibility of systematic observer bias. An average inter-rater agreement of .90 on these checks argues against an interpretation of the results in terms of such experimenter bias.

4. For the target experimental students the mean number of observation periods per individual was 45.1; target control students were observed on an average of 38.8 occasions.